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UNITED STATES PATENT AND TRADEMARK OFFICE

Examiner: M. D. Bissett *Art Unit:* 1711

In re:

Applicant: A. COOPER

Serial No.: 10/822,879

Filed: 04/13/2004

DECLARATION OF UNOBVIOUSNESS

Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450

Sir:

This is to declare that I, ***Alex COOPER***, has been working in the area of grinding and polishing of various materials for over 40 years. From 1963 until 1989 I was working as a Research Scientist and a Technology Group Leader in Institute of Superhard Materials, being involved in development and commercialization of technologies related to grinding and polishing of ceramics, glass, semiconductors, etc. From 1996 to 2000 I was a Vice President for Science and Technology at ALGE Company, being involved in development of new tools for grinding and polishing of various materials. From 2000 to present I am a Project Manager and Scientist in Universal Photonics, Inc., in Hicksville,

New York, a company which is also involved in grinding and polishing of industrial materials. I have 15 inventor's certificates and patents related to grinding and polishing, and 25 publications on this subject.

I carefully reviewed the prior art applied by the Examiner in the above identified application. The prior art shows products having a multi-layered structure, in which curing agents can migrate from one layer to the other. The invention disclosed in the above identified application deals with a very specific product. In particular it relates to a method of producing polyurethane pad which has a hard body to form a hard backing for the pad, a working layer which can perform grinding and polishing itself, or can be additionally provided with abrasive, and a connecting layer which connects the relatively softer working layer to the relatively harder body. In accordance with the invention, the quantity of the curing agent in the body and in the working layer is deliberately reduced, while the quantity of the curing agent in the connecting layer is selected so that during the manufacture of the pad the curing agent migrates in a targeted fashion from the connecting layer to the body and to the working layer to add to the reduced curing agent, and to provide the exactly required quantity of the curing agent in the body and in the working layer.

In our extensive experiments and testing it has been found that with this approach the body and the working layer obtain the quantity of the

curing agent which is exactly necessary for their manufacture. With the previous, prior art approach, during migration of the curing agent to the body and to the working layer, the quantity of the curing agent in the body and in the working layer was excessively increased above the required quantity, which led to worsening of the properties of the body and the working layer. With the present invention, the body and the working layer obtain optimum, exactly needed amounts of the curing agent, thus providing high quality of the body and the working layer.

An additional important advantage of the present invention is that the connection between the working layer and the body through the connecting layer is stronger than in the pads produced in accordance with the existing technologies, as was proven in our tests.

It is believed to be clear that the present invention provides for the highly advantageous results. It is also respectfully submitted that the present invention is unobvious over the prior art applied in this application. While migration of substances, for example of the curing agent between the layers is known, the prior art did not provide any hint or suggestion of deliberately reducing the amounts of the curing agents in a body and a working layer of a pad, and providing the amount of the curing agent in connecting layer such that

the curing agent from the connecting layer complements the reduced amounts of the curing agent in the body and in the working layer of the polyurethane pad.

It is believed that the present invention should be considered as patentable and the claims currently on file should be considered as allowable over the prior art applied in the present application.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that those statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Alex Cooper

A. COOPER

10/15/05